

In the Specification:

Please amend the Specification as follows:

AIRCRAFT ENGINE WITH INTER-TURBINE ENGINE FRAME

CROSS REFERENCE TO RELATED APPLICATION(S)

This is a divisional of application Serial No. 09/997,461 filed on November 29, 2001, which is hereby incorporated by reference herein.

BACKGROUND OF THE INVENTION

[0007] One embodiment of the invention is a gas turbine engine assembly wherein the frame is an inter-turbine frame axially located between first and second turbines of first and second rotors, respectively. The first turbine is located forward of the second turbine and the second rotor includes a second shaft which is at least in part rotatably disposed coaxially with and radially inwardly of the first rotor. The second rotor is supported by a respective aftwardmost second turbine frame bearing mounted in the aft central bore of the aft sump member and the first rotor is partly supported by a respective first turbine frame bearing mounted in the forward central bore of the forward sump member. An axial center of gravity of the second turbine passes though or very near the second turbine frame bearing. In a more particular embodiment of the invention, the second turbine includes a turbine disk assembly having axially adjacent rotor disks interconnected by structural disk forward and aft spacer arms, respectively. The turbine disk assembly is connected to the second shaft at or near the axial center of gravity. A conical shaft extension may be used to drivingly connect the turbine disk assembly to the second shaft. The conical shaft extension is

connected to the turbine disk assembly at or near the axial center of gravity. The rotor disks have hubs connected to rims by webs extending radially outwardly from the hubs, each of the rotor disks supports a row of blades supported in the disk rim.

[0020] In the exemplary embodiment of the invention illustrated herein, the forward and aft spacer arms 39 and 37 are integrally formed as one piece with the disks 40 and bolted together with bolted connections 100 to form a low pressure turbine disk assembly 50 of the low pressure turbine (LPT) 26 as more particularly illustrated in FIG. 4. The forward and aft spacer arms 39 and 37 extend axially forwardly and aftwardly, respectively, away from the disk rim 46 and have radially inwardly extending connecting flanges 58 at spacer arm ends. Adjacent forward and aft spacer arms 39 and 37 are bolted together with the bolted connections 100 having bolts 102 through apertures 103 in the connecting flanges 58. Referring again to FIG. 2, the conical shaft extension 107, also referred to as the low pressure turbine shaft cone, drivingly connects the low pressure turbine disk assembly 50 to the low pressure shaft 30.